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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,228	10/11/2000	Craig H. Barratt	015685.P019C	2662
45222 7590 05/14/2007 ARRAYCOMM/BLAKELY 12400 WILSHIRE BLVD SEVENTH FLOOR LOS ANGELES, CA 90025-1030			EXAMINER GESESSE, TILAHUN	
			ART UNIT 2618	PAPER NUMBER
			MAIL DATE 05/14/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/689,228

Applicant(s)

BARRATT ET AL.

Examiner

Tilahun B. Gesesse

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 40-97 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 40-43, 57-66, 78-83 and 94-97 is/are rejected.
- 7) ☒ Claim(s) 44-56, 67-77, 84-93 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This is in response to applicant's response filed January 30 , 2007, in which claims 1-39 have been deleted and claims 40-97 pending.

### ***Response to Arguments***

2. Applicant's arguments filed January 30, 2007 have been fully considered but they are not persuasive.

On page 12, third paragraph applicant argued that sequentially transmitting the plurality of processed signals generates the desired radiation level.

The examiner disagrees. To how the sequentially transmitting plurality of processed signals generate the desired radiation level. In order to generate desired radiation level, the transmitter has to have knowledge of signal received before generating desired radiation level, such as measurement of received signal and adjustment of power level of the received signal has been taken place. That's why applicant's claims flag incomplete for omitting essential steps. Therefore, applicant argument to 112 2<sup>nd</sup> paragraph is moot.

On page 13, second paragraph of response to previous action, applicant argued that Ottersten does not teach iteratively processing a signal through a plurality of signal processing procedures and sequentially transmitting the plurality of processed signals.

The examiner disagrees. Applicant seems to relay on the term "iteratively" , is defined relating to successive repletion of a mathematical process, using the result of

one stage as the input for the next. Ottersten teaches Spatio-temporal processor procedures and maintains spatio-temporal signatures for each remote terminal for each frequency channel , and calculates spatio-temporal multiplexing and demultiplexing weights for use by spatio-temporal (20 and 23 of figure 8) and digital signal processor (DSP) receive signals (see column 13, line 55 through column 14, lines 23 and figures 1 and 8).

Ottersten teaches multiple channels receive being processed by processor (44 of fig. 8) and reprocessed by weight processor (43 of fig. 8) and then transmit through antenna array (14 of figs. 1 and 5, col. 25, lines 60-col. 26, line 10). The repeated processing signals using plurality of processor using spatio-temporal processing procedures and sequentially transmitting processed signals to remote terminals (see column 26, line 54-column 27 line 25 and figure 11).

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 40, 60 and 78 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the claims recite "generating a desired radiation level at a number of locations within a desired sector".

It is incomplete to how the sequentially transmitting plurality of processed signals being generates a desired radiation level at a number of location within the desired sector.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 40-43,57-66,78-83,94-97 are rejected under 35 U.S.C. 102(e) as being anticipated by Ottersten et al (U.S. pat. No. 5,828,658)"**Ottersten**".

Claim 40, Ottersten discloses a method comprising: iteratively processing a signal through a plurality of signal **processing procedures** (column 15, line 37-column 16, line 23 and figure 5) to generate a plurality of processed signals (column 16, lines 14-30 and figure 5) and sequentially transmitting the plurality of processed signals

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through a coupled antenna array (column 16, lines 14-30, column 24 lines 29-41 and figures 1 and 5), generating a desired radiation level at a number of locations within a desired sector (column 16 lines 38-48 and figures 1 and 11). Ottersten discloses iteratively processing signal is transmitted through plurality of antennas (column 13, line 55-column 14 line 7 and figure 8). Ottersten further teaches multiple channels receive being processed by processor (44 of fig.8) and reprocessed by weight processor (43 of fig.8) and then transmit through antenna array (14 of figs.1 and 5, col. 25, lines 60-col.26, line 10).

Ottersten teaches multiple channels receive being processed by processor (44 of fig.8) and reprocessed by weight processor (43 of fig.8) and then transmit through antenna array (14 of figs.1 and 5, col. 25, lines 60-col.26, line 10). The repeated processing signals using plurality of processor using spatio-temporal processing procedures and sequentially transmitting processed signals to remote terminals (see column 26, line 54-column 27 line 25 and figure 11).

As to claim 41, Ottersten discloses the signal is transmitted using a CDMA protocol (column 13, lines 40-48).

As to claim 42, Ottersten discloses the desirable radiation level is a non-null level (column 18 lines 36-49 and col.26, line 54-col. 27, line 25 and fig.11).

Claims 43 , Ottersten teaches a range of azimuths up to a complete range of azimuth of the antenna array, (see column 26, lines 54-column 27, line26 and fig.11).

Claims 57, , the processor element develop a plurality of signal processing procedures communicate with the plurality of antenna array (14) (see figures 1,5, 8, col. 18, line 35 through col.19, line 40).

Claims 58-59, Ottersten teaches storage medium comprising content executed by an accessing machine (see col. 12, lines 54-60).

Claim 60, Ottersten discloses a method comprising: iteratively processing a signal through a plurality of signal **processing procedures** (column 15, line 37-column 16, line 23 and figure 5) to generate a plurality of processed signals (column 16, lines 14-30 and figure 5) and sequentially transmitting the plurality of processed signals through a coupled antenna array (column 16, lines 14-30, column 24 lines 29-41 and figures 1 and 5), generating a desired radiation level at a number of locations within a desired sector (column 16 lines 38-48 and figures 1 and 11). Ottersten discloses iteratively processing signal is transmitted through plurality of antennas (column 13, line 55-column 14 line 7 and figure 8). Ottersten further teaches multiple channels receive being processed by processor (44 of fig.8) and reprocessed by weight processor (43 of fig.8) and then transmit through antenna array (14 of figs.1 and 5, col. 25, lines 60-col.26, line 10).

Ottersten teaches multiple channels receive being processed by processor (44 of fig.8) and reprocessed by weight processor (43 of fig.8) and then transmit through antenna array (14 of figs.1 and 5, col. 25, lines 60-col.26, line 10). The repeated processing signals using plurality of processor using spatio-temporal processing

procedures and sequentially transmitting processed signals to remote terminals (see column 26, line 54-column 27 line 25 and figure 11).

Claims 65- 66 , Ottersten teaches a range of azimuths up to a complete range of azimuth of the antenna array, (see column 26, lines 54-column 27, line 26 and fig. 11).

claim 61 , Ottersten discloses the processing elements are comprised of one or more a DSP (column 13 lines 55-68 and figure 8).

claims 62, 64 Ottersten discloses a transceiver, coupled with antenna array and the processors (figures 1, 5, 8 and col. 18, line 35 through col. 19, line 40).

Claims 63, Ottersten teaches the processor element are integrated within the transceiver (figures 1, 5, 8 and col. 18, line 35 through col. 19, line 40).

Claim 78, Ottersten discloses a method comprising: iteratively processing a signal through a plurality of signal **processing procedures** (column 15, line 37-column 16, line 23 and figure 5) to generate a plurality of processed signals (column 16, lines 14-30 and figure 5) and sequentially transmitting the plurality of processed signals through a coupled antenna array (column 16, lines 14-30, column 24 lines 29-41 and figures 1 and 5), generating a desired radiation level at a number of locations within a desired sector (column 16 lines 38-48 and figures 1 and 11). Ottersten discloses iteratively processing signal is transmitted through plurality of antennas (column 13, line 55-column 14 line 7 and figure 8). Ottersten further teaches multiple channels receive being processed by processor (44 of fig. 8) and reprocessed by weight processor (43 of

fig.8) and then transmit through antenna array (14 of figs.1 and 5, col. 25, lines 60-col.26, line 10).

Ottersten teaches multiple channels receive being processed by processor (44 of fig.8) and reprocessed by weight processor (43 of fig.8) and then transmit through antenna array (14 of figs.1 and 5, col. 25, lines 60-col.26, line 10). The repeated processing signals using plurality of processor using spatio-temporal processing procedures and sequentially transmitting processed signals to remote terminals (see column 26, line 54-column 27 line 25 and figure 11).

Claim 79,Ottersten discloses the desirable radiation level is a non-null level (column 18 lines 36-49 and col.26, 54-col. 27, line 25 and fig.11).

Claims 82- 83, Ottersten teaches a range of azimuths up to a complete range of azimuth of the antenna array, (see column 26, lines 54-column27, line26 and fig.11).

Clams 94-97, the processor element develop a plurality of signal processing procedures communicate with the plurality of antenna array (14) (see figures 1,5, 8, col. 18, line 35 through col.19,line 40).

Claim 80, Ottersten discloses a transceiver, coupled with antenna array and the processors (figures 1, 5, 8 and col. 18, line 35 through col.19,line 40).

Claim 81,Ottersten teaches the processor element are integrated within the transceiver (figures 1, 5, 8 and col. 18, line 35 through col.19, line 40).

***Allowable Subject Matter***

5. Claims 44-56, 67-77, 84-93, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose the orthogonal weight vectors from one or more rows or columns of the complex valued Walsh-Hadamard matrix and a sequence of elements are basis vectors of a Fourier transform.

**Conclusion**

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tilahun B Gesesse whose telephone number is 571-272-7879. The examiner can normally be reached on flexible schedule.

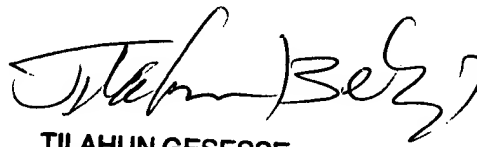
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899.

The Central FAX Number is 571-273-8300. For patent related correspondence, hand carry deliveries must be made to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), and facsimile transmissions must be sent to the Central FAX number .

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TG

April 26 ,2007

  
TILAHUN GESESSE  
PRIMARY EXAMINER